



Secretary of the Air Force
Office of Legislative Liaison

CONGRESSIONAL HEARING RESUME

106th Congress

Date: 10 May 2000

SUBJECT: Hearing on Joint Strike Fighter (JSF) Acquisition Reforms

COMMITTEE: House Government Reform Committee
Subcommittee on National Security, Vet Affairs, and International Relations

CHAIRMAN: The Honorable Chris Shays (R-CT)

OTHER COMMITTEE MEMBERS PRESENT: CM Rudy Blagojevich (D-IL)
CW Judy Biggert (R-IL), CM Lee Terry (R-NE)

WITNESSES: Mr Louis Rodrigues, US General Accounting Office
Maj Gen Raymond Huot, SAF/AQP, Director of Global Power Programs
Mr Stan Soloway, Deputy Under Secretary of Defense (Acquisition Reform)
Dr Thomas McNaugher, Deputy Director Arroyo Center
Mr Rodney Larkins, Business Development Manager, 3M Corporation
Dr Wesley Harris, Professor, Department of Aeronautics and Astronautics, MIT

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Date: 10 May 2000

EXECUTIVE SUMMARY

The Subcommittee convened this hearing to determine to what extent the Department of Defense (DoD) is implementing acquisition reforms and management improvements in the Joint Strike Fighter (JSF) program. The majority of the issues discussed during the hearing related to the May 2000 GAO Report on JSF Acquisition. This report focused on JSF technology risk reduction efforts and concluded that DoD should adjust the currently planned March 2001 engineering and manufacturing development decision to allow adequate time to mature critical technologies. CM Shays was quick to zero in on the differences between DoD and GAO assessments of JSF technology risk. He received concurrence from both DoD and the GAO that the common goal is to ensure a low risk level for critical technologies prior to JSF EMD entry. The academic and industry witnesses testified that while a low technology risk is necessary prior to EMD entry, they were non-committal as to whether or not TRLs were a valid method to ensure such risk reduction takes place. Overall, CM Shays was pleased with the hearing and seemed to accept the GAO and DoD differences in interpretation of TRLs.

The Subcommittee was called to order at 1005.

OPENING REMARKS

Chairman Shays

Opening statement was “The military procurement holiday is about to come to an end.” Outlined the need to modernize the acquisition systems DoD will use to procure future weapon systems. Was concerned acquisition reform concepts are not being applied to the JSF program. Briefly outline the differences between GAO and DoD relative to technology maturation.

CM Blagojevich

Stated that if we slow EMD it does not necessarily slow down the entire program. The time we use developing technologies now will save time in the long run. Also stated we need to match program managers with program cycle times to increase accountability in acquisition programs.

CM Terry

Wanted to ensure the “protocols and systems” are in place to ensure best use of the taxpayers money.

WITNESS STATEMENTS

Mr Rodrigues

Provided testimony outlining the need for application of best business practices for developing technology and products. Defined TRLs with emphasis on TRL 7 as this requires a technology to approximate its final form while being demonstrated in a relevant environment. Maintained TRL 7 required for JSF EMD entry and produced a chart showing eight critical JSF technologies ranging from TRL 4 to 6 at EMD entry. Recommended a delay in JSF EMD until technology can be demonstrated to acceptable levels.

Mr Soloway

Outlined DoD Acquisition Reform measures embodied in the DoD 5000 series document rewrite. Provided several “good news” programs highlighting the progress DoD has made relative to Acq Reform. Emphasized flexibility as a key enabler in instituting new requirements and acquisition strategies. Made the point that in the new systems acquisition environment, key decisions and long term funding commitments may not be made until technology shows required maturity. Offered measures the JSF program is using to mitigate risk such as use of modeling and simulation. Countered the GAO requirement for TRL 7 prior to EMD as requiring the kind of systems integration that takes place during EMD.

Maj Gen Huot

Highlighted the use of Cost and Operational Performance Trades have resulted in every JSF requirement having to earn its way onto the aircraft on the basis of cost effectiveness. Outlined Concept Demonstration Phase with emphasis that the concept demonstrator aircraft are not prototypes. Emphasized that technology integration and its corresponding risk is and was always to be addressed in EMD. Explained the JSF program uses “waterfall charts” built using a Willoughby template to identify, baseline, and track technology risk. Added all of the critical technologies areas have achieved or are on track to reach a low level of risk prior to the start of EMD.

Dr McNaugher

Defined “production concurrency” as the widespread practice of rushing new systems through the later stages of development and into production. Provided three scenarios where “production concurrency” was justified during the Cold War. Offered that though the perceived post-Cold War threat may not justify pushing leading edge technologies, he was “skeptical of a more relaxed approach” (slipping a program six months to allow technology to mature). Reasoned that politics plays a huge role in a program’s survival and you “can’t convince a program manager that a six month delay is not a mortal wound.” Went on to say that relative to slipping a program, “flexibility is good from a program perspective, it can be dangerous from a political perspective.”

Mr Larkins

Provided background on 3M products and investments. Discussed segregation of technology and product development from a corporate structure perspective. Stated 3M’s methodology in initiating new programs begins with assessing the business case and proceeds to assessing required technology. Offered that a risk assessment (non-specific) is performed if there is a question as to whether or not new technologies can provide necessary performance characteristics.

Dr Harris

Began with the statement that the high rate of change of technology remains a significant challenge to acquisition of commercial and military systems. Offered several factors that lead to a win/win environment for the government and contractor when developing technology to a high readiness level. Stated that the “importance of advanced technology at a high maturity level is so great that the government must incentivize the contractor to develop advance technology.” Added that quantitative-based language and assessment tools required to ensure success in developing advanced technology to a high level of maturity.

KEY COMMENTS, QUESTIONS, AND ANSWERS

- **CM Shays** directed a question to Mr Rodrigues to confirm the GAO is not recommending we cancel the JSF program just have DoD “follow the game plan.” **Mr Rodrigues** responded affirmatively. **CM Shays** asked Mr Rodrigues for a clarification of some of the TRL definitions then asked about the nature

of the dispute between the GAO and DoD relative to the use of TRLs. **Mr Rodrigues** responded there was a misunderstanding in the application of TRLs where DoD thought a technology had to be demonstrated on the JSF. Following Mr Soloway's and Gen Huot's testimony, **CM Shays** got into a discussion with both on TRL assessment for the JSF. **Mr Soloway and Gen Huot** explained TRLs should be used to measure risk associated with individual technologies not the integration of those technologies onto a platform. A misunderstanding in the application of TRLs resulted in initial low DoD TRL assessments based on a requirement to integrate technology on the JSF. Subsequent DoD TRL grading based on individual technology risks resulted in higher TRL assessments. **Mr Soloway** provided CM Shays the higher DoD TRL assessments. **CM Shays**, asked Dr Harris if he was in favor of using TRLs as a tool. **Dr Harris** responded "we're wrapping ourselves around the axle over TRLs" - we need to understand what we mean so we can hold program managers accountable. Relative to applying best business practices, **CM Shays** asked **Mr Larkins** if it was *unfair* to say DoD needs to use them the same way business does. **Mr Larkins** responded yes and **Dr Harris** added "commercial best practices is a loaded word" there are different methods with no agreed upon body of knowledge of what it means.

- **CW Biggert**, referring to the Senate mark to "delete EMD money but allow DoD to get it back if the plane is ready to take the next step" asked Mr Rodrigues if he thought the JSF program would be ready. **Mr Rodrigues** answered "no."
- **Mr Rapallo (Minority Staffer)** asked Gen Huot what effects a delay would have on the JSF. **Gen Huot** referenced Deputy Secretary of Defense De Leon's letter to the Service Chiefs and highlighted force structure impacts. **Mr Soloway** added cost increase as another impact.

Questions for the Record

Mr Rodrigues stated that \$1 problem encountered in Dev Val equates to a \$10 problem in EMD and a \$100 problem in production. CM Shays asked Gen Huot and Mr Soloway if they agreed. They answered they could not validate the numbers and would take it as a question for the record.

CM Shays asked Gen Huot and Mr Soloway if they agreed with the TRL assessments Mr Rodrigues offered in his testimony assuming integration of critical technologies on a JSF platform were taken into consideration. Taken as a question for the record.